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PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

17 MAR 2005

To:

ASTRAZENECA
Global Intellectual Property
S-151 85 Södertälje
SUEDE

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NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(PCT Rule 71.1)

Date of mailing
(day/month/year)

07.03.2005

Applicant's or agent's file reference
100869-1 WO

IMPORTANT NOTIFICATION

International application No.
PCT/GB2004/001132

International filing date (day/month/year)
16.03.2004

Priority date (day/month/year)
20.03.2003

Applicant
ASTRAZENECA AB et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international
preliminary examining authority:



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PATENT COOPERATION TREATY



PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

CODE	DATE	NTD
ANKOM: 16 MAR 2005		GIPS
DATA PATEREN		
FINAL CHECK		

Applicant's or agent's file reference 100869-1 WO	FOR FURTHER ACTION See Form PCT/PEA/416	
International application No. PCT/GB2004/001132	International filing date (day/month/year) 16.03.2004	Priority date (day/month/year) 20.03.2003
International Patent Classification (IPC) or national classification and IPC C07D413/14, C07F9/5558, A61K31/422, A61K31/675, A61P31/04		
Applicant ASTRAZENECA AB et al.		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>		
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input checked="" type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>		
Date of submission of the demand 22.09.2004	Date of completion of this report 07.03.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Allard, M Telephone No. +31 70 340-2002 	

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
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Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-58 as originally filed

Claims, Numbers

1-12 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
 - ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing *(specify)*:
 - ☐ any table(s) related to sequence listing *(specify)*:
 4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing *(specify)*:
 - ☐ any table(s) related to sequence listing *(specify)*:

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application,
☒ claims Nos. 7 (in whole), 8, 9-12 (in part)

because:

- ☒ the said international application, or the said claims Nos. 8 relate to the following subject matter which does not require an international preliminary examination (specify):

see separate sheet

- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
- ☒ no international search report has been established for the said claims Nos. 7 (in whole), 9-12 (in part)
- ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
- | | |
|----------------------------|--|
| the written form | <input type="checkbox"/> has not been furnished |
| | <input type="checkbox"/> does not comply with the standard |
| the computer readable form | <input type="checkbox"/> has not been furnished |
| | <input type="checkbox"/> does not comply with the standard |
- ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.
- ☐ See separate sheet for further details

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-6, 8-12
	No: Claims	-
Inventive step (IS)	Yes: Claims	-
	No: Claims	1-6, 8-12
Industrial applicability (IA)	Yes: Claims	1-6, 9-12
	No: Claims	-

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VI Certain documents cited

1. Certain published documents (Rule 70.10)

and /or

2. Non-written disclosures (Rule 70.9)

see separate sheet

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

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Reference is made to the following documents:

- D1: WO 01/81350 A (ASTRAZENECA AB ET AL) 1 November 2001 (2001-11-01)
D2: LEE S C ET AL: "Carbon-carbon linked (pyrazolylphenyl)oxazolidinones with antibacterial activity against multiple drug resistant gram-positive and fastidious gram-negative bacteria" BIOORGANIC AND MEDICINAL CHEMISTRY, vol. 9, no. 12, December 2001 (2001-12), pages 3243-3253, XP002283682
D3: PHILILIPS O A ET AL: "Synthesis and antibacterial activity of 5-substituted oxazolidinones" BIOORGANIC AND MEDICINAL CHEMISTRY, vol. 11, no. 1, 2 January 2003 (2003-01-02), pages 35-41, XP002283683

Re Item III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

Claim 8 relates to subject-matter considered by this Authority to be covered by the provisions of Rule 67.1(iv) PCT. Consequently, no opinion will be formulated with respect to the industrial applicability of the subject-matter of these claims (Article 34(4)(a)(I) PCT).

The term "pro-drug" used in claims 7-12 is a functional term, which in the present case is so unclear (Article 6 PCT), even in the light of the description (page 11, line 16, to page 12, line 3), that a meaningful international search with regard to this term is impossible. Consequently, the subject-matter of claim 7 in the whole, and further of claims 8-12 insofar it relates to a "pro-drug", which has not been searched, shall not be the subject of the present opinion, see Rule 66.1 (e) PCT.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Novelty (Article 33(2) PCT)

The available prior art does not disclose oxazolidinones having the combination of N-HET and T substituents as recited in claim 1 of the present application: the subject-

**INTERNATIONAL PRELIMINARY
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matter of claims 1-6 and 8-12 is therefore novel.

Inventive step (Article 33(3) PCT)

D1, which is considered to represent the closest prior art, describes amongst others antimicrobial 2-oxazolidinones substituted in position 5 by a N-azolylmethyl residue, and substituted in position 3 by a (hetero)aryl radical, itself substituted by a T group, see claims 1 and 12 of D1. The group T may be amongst others an unsaturated 5-membered heteroaryl linked through a carbon atom, like a triazole, pyrazole, isoxazole or isothiazole, see D1, page 8, lines 24-27, and page 27, lines 15-20.

In the light of the teachings of D1, the problem underlying and solved by the present application can be seen in the provision of further antibacterial oxazolidinones.

The solution to this problem proposed in the present application is merely the selection of a combination of meanings of the substituents in position 3 and 5 of the oxazolidinone ring, combination already suggested, but not specifically disclosed, in D1. Such selection does not involve an inventive step in the absence of substantiated surprising resulting effects or properties.

It is moreover noted that such combination is also suggested by the combined teachings of D2 and D3.

The subject-matter of claims 1-6 and 8-12 lacks therefore an inventive step.

Industrial applicability (Article 33(4) PCT)

The compounds, compositions and processes of claims 1-6 and 9-12 can be applied in the pharmaceutical industry.